

**Notice of Allowability**

Application No.

09/782,780

Examiner

Lilian Vo

Applicant(s)

BOLLELLA ET AL.

Art Unit

2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/27/05.
2. ☒ The allowed claim(s) is/are 1, 5 - 7, 12 - 14 and 19 - 20 now renumbered as 1 - 9.
3. ☒ The drawings filed on 13 February 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 05272005.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

  
MENG-LI YAN  
SUPERVISOR/ PATENT EXAMINER  
TECHNOLOGY CENTER 2100

Lilian Vo  
Examiner  
Art Unit: 2195

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Marcia Doubet, registration no. 40,999 on 5/27/05.

3. The application has been amended as follows:

In the claims:

i) **Delete claims 2 – 4, 9 – 11 and 16 – 18.**

ii) **Replace Claim 1:**

**Claim 1** (currently amended): A computer program product for improving scheduling of tasks, the computer program product embodied on one or more computer readable media for execution on a computer and comprising:

computer-readable program code for computing whether execution of a plurality of schedulable tasks is feasible, wherein each of the tasks has an associated cost and an associated deadline;

computer-readable program code for computing a task-specific maximum cost extension allowable for a subsequent execution of each task, wherein the maximum cost extensions for all the tasks, when taken together, allow the execution of the plurality of tasks to remain feasible and wherein the maximum cost extension allowable for each task is computed incrementally by using, for a first subsequent execution, a fixed percentage of the associated cost for the task to compute a revised cost and by using, for other subsequent executions, a fixed percentage of the revised cost for the task; and

computer-readable program code for using, upon determining that any of the schedulable tasks exceeds its associated cost during its subsequent execution, the maximum cost extension for that task as an upper limit on additional allowable execution time for the task.

iii) **Replace Claim 5:**

**Claim 5** (currently amended): The computer program product according to Claim 1, wherein zero is used instead of the fixed percentage when computing the maximum cost extension, for a subset of the tasks, for the first subsequent execution.

iv) **Replace Claim 6:**

**Claim 6** (previously presented): The computer program product according to Claim 1, wherein the computer-readable program code for using further comprises:

computer-readable program code for alternatively using an amount of time remaining until the task's associated deadline as the upper limit on additional allowable execution time, when the time remaining is not greater than the maximum cost extension for the task.

v) **Replace Claim 7:**

**Claim 7** (currently amended): A system for improving scheduling of tasks, comprising:

at least one processor;

means for computing whether execution of a plurality of schedulable tasks by the at least one processor is feasible, wherein each of the tasks has an associated cost and an associated deadline;

means for computing a task-specific maximum cost extension allowable for a subsequent execution of each task, wherein the maximum cost extensions for all the tasks, when taken together, allow the execution of the plurality of tasks to remain feasible and wherein the maximum cost extension allowable for each task is computed incrementally by using, for a first subsequent execution, a fixed percentage of the associated cost for the task to compute a revised cost and by using, for other subsequent executions, a fixed percentage of the revised cost for the task; and

means for using, upon determining that any of the schedulable tasks exceeds its associated cost during its subsequent execution, the maximum cost extension for that task as an upper limit on additional allowable execution time for the task.

vi) **Replace Claim 12:**

**Claim 12** (currently amended): The system according to Claim 7, wherein zero is used instead of the fixed percentage when computing the maximum cost extension, for a subset of the tasks, for the first subsequent execution.

vii) **Claim 13:**

Line 1, replace "8" with -- 7 --;

viii) **Replace claim 14:**

**Claim 14** (currently amended): A computer-implemented method for improving scheduling of tasks, comprising steps of:

computing whether execution of a plurality of schedulable tasks is feasible, wherein each of the tasks has an associated cost and an associated deadline;

computing a task-specific maximum cost extension allowable for a subsequent execution of each task, wherein the maximum cost extensions for all the tasks, when taken together, allow the execution of the plurality of tasks to remain feasible and wherein the maximum cost extension allowable for each task is computed incrementally by using, for a first subsequent execution, a fixed percentage of the associated cost for the task to compute a revised cost and by using, for other subsequent executions, a fixed percentage of the revised cost for the task; and

upon determining that any of the schedulable tasks exceeds its associated cost during its subsequent execution, using the maximum cost extension for that task as an upper limit on additional allowable execution time for the task.

ix) **Replace claim 19:**

**Claim 19** (currently amended): The computer-implemented method according to Claim 14, wherein zero is used instead of the fixed percentage when computing the maximum cost extension, for a subset of the tasks, for the first subsequent execution.

x) **Claim 20:**

Line 1, replace "15" with -- 14 --;

4. Pursuant to MPEP 606.01, the title has been changed to read: -- SYSTEM FOR INCREMENTALLY COMPUTING THE MAXIMUM COST EXTENSION ALLOWABLE FOR SUBSEQUENT EXECUTION OF EACH TASK USING FIXED PERCENTAGE OF THE ASSOCIATED COST --.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lilian Vo whose telephone number is 571-272-3774. The examiner can normally be reached on Monday - Thursday, 7:30am - 5pm.

Art Unit: 2195

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist at 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lilian Vo  
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lv  
May 27, 2005

  
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